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SITA ATS AIRCOM Data Link Services

NASA Integrated CNS Technologies

Conference and Workshop

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Overview

- **ACARS/ATN Background**
- **AIRCOM Datalink ACARS Services**
- **ATN AIRCOM Services**
- **ATS AIRCOM Services**
- **ATS AIRCOM Systems**
- **Conclusion**

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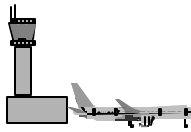





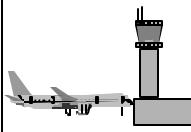
ACARS/ATN Background

- **Aircraft Communications Addressing and Reporting System (ACARS) Data Link**
 - Initially AOC
 - AOC Use Continues to Expand
 - ATS Use is Evolving
- **Continued Growth in both AOC and ATS Use Since ACARS Inception**
- **Industry has chosen the ATN as the next generation aeronautical datalink communications architecture**
- **Since 1988, ICAO has adopted the ATN and ATN subnetwork standards**
- **AOA has been selected as interim solution to help alleviate the current capacity constraints**

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Airline Data Link Application

| Home Station  |  |  |  |  |  | Remote Station  |
|--|---|---|---|--|---|--|
| Park/Taxi | Take-Off | Depart/Climb | En Route | Approach | Land | Taxi/Park |
| <ul style="list-style-type: none"> • Out • Link/Test Clk • Updates • Fuel Reports • Crew Info • Delay Reports <div>From Aircraft</div> | <ul style="list-style-type: none"> • Off • Engine Data | <ul style="list-style-type: none"> • Engine Data | <ul style="list-style-type: none"> • Position Reports • Weather Reports • Delay Information • ETA • Performance Reports • Voice Requests • Engine Data • Maintenance Information • Oceanic ADS | <ul style="list-style-type: none"> • Gate Info • Requests • ETA • Special Requests • Engine Data • Maintenance Information | <ul style="list-style-type: none"> • On | <ul style="list-style-type: none"> • In • Fueling Data • Crew Information • Fault Data • Fuel Reports |
| <ul style="list-style-type: none"> • PDC • ATIS • DDTC • Weight & Balance • Flight Plans <div>To Aircraft</div> | | <ul style="list-style-type: none"> • Weather Reports | <ul style="list-style-type: none"> • Weather Reports • Re-routing Information • TWIP • Oceanic Clearances | <ul style="list-style-type: none"> • Gate Information • Passenger Information • Crew Information | | |

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VDL Service Performance



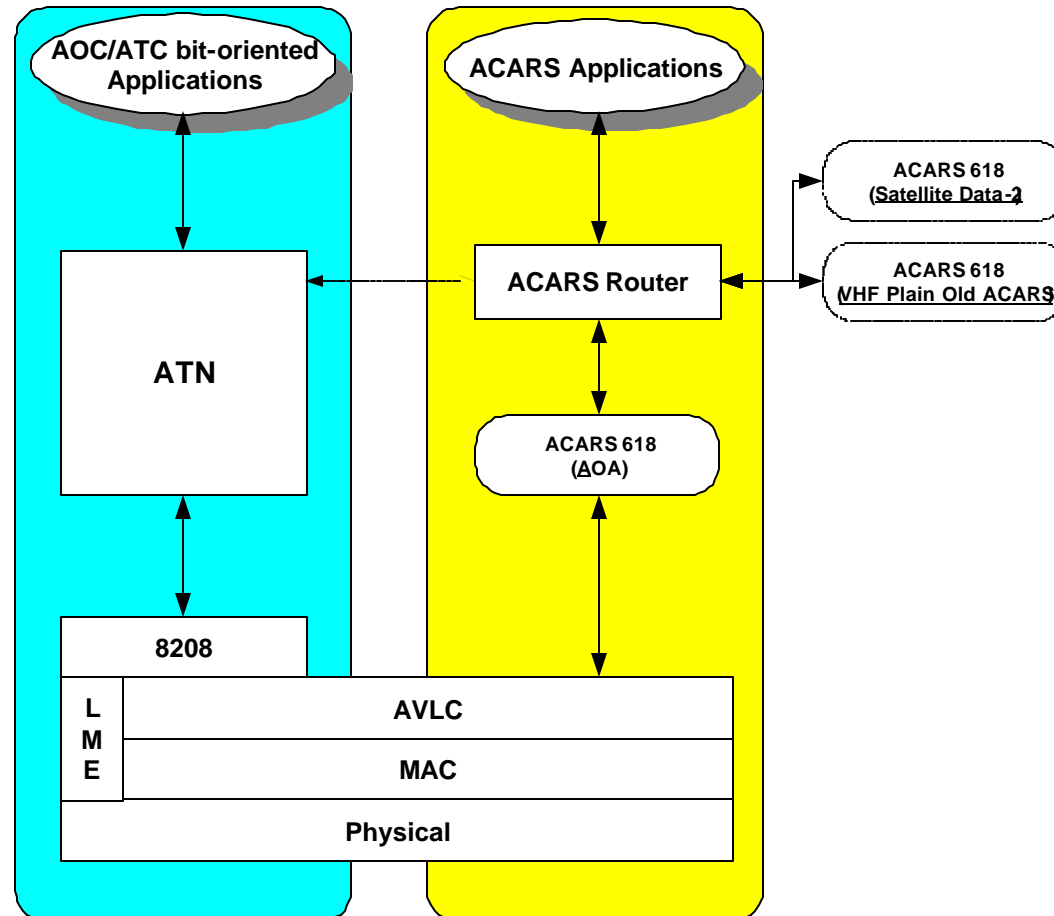
- One VDL channel provides a 10 to 20 times capacity increase over one ACARS channel

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VDL/AOA/ATN

VDL/ATN Architecture ACARS Over AVLC (AOA)



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AIRCOM Data Link ACARS Services

- **VHF *AIRCOM***
- **Worldwide Coverage including North America:**
 - 675 Ground Stations in 164 Countries used by close to 5000 aircraft from over 100 airlines exchanging 400,000+ messages daily
 - 117 Ground Stations in US
 - 35 Ground Stations in Canada
 - 13 Ground Stations in Mexico
- **Satellite *AIRCOM***
 - Provides Worldwide Coverage

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AIRCOM Data Link ACARS Services

- **VDL AIRCOM (VDL Mode 2/AOA)**
 - Launched May 2001
 - Successful Flight test with Airbus in October 2001
 - Plan flight test with major airline Spring 2002
 - Participation in EuroVDL
- **Since 01, SITA continuing with roll-out of VGS (VDL/AOA) in Europe including:**
 - Toulouse, Orly, Mulhouse, Bordeaux, Lyon, Shannon, Frankfurt, Amsterdam, Bretigny, Boscombe Down
 - further 23 VGS planned for 2002
- **SITA planning VGS in Miami and other US locations as required**

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ATN AIRCOM Services

- **VDL Mode 2/ATN**
 - SITA will offer service to airlines wishing to participate in the FAA CPDLC and Eurocontrol Link2000+ Programs
 - VDL/ATN will support the ICAO ATN CM, CPDLC, ADS, and FIS applications
 - Successful Flight Tests with Eurocontrol January 2002-CPDLC messages exchanged end-to-end
 - VHF Ground Stations (VGS) POA/AOA/ATN Capable Deployment in 2002-
 - Core Europe
 - Miami and Other US Locations as Required
 - Supporting Eurocontrol GACS trials with LH and BA
- **Aeronautical Mobile Satellite Services (AMSS) Data-3**

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ATS AIRCOM Services

- **Pre-FANS (ATIS, TWIP, PDC, DCL, OCL)**
- **D-ATIS Gateway**
- **FANS-1/A**
 - Supports the FANS-1/A AFN, CPDLC, and ADS applications

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Digital ATIS Locations

- Australia
- Austria
- Bahrain
- Canada
- China
- Denmark
- France
- Germany
- Ivory Coast
- Japan
- Korea
- New Zealand
- Norway
- Portugal
- Singapore
- Sweden
- Switzerland
- Thailand
- United Kingdom
- US

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Departure Clearance Locations

- Australia
- Belgium
- China
- Denmark
- France
- Ivory Coast
- Korea
- Sweden
- United Kingdom
- United States

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SITA FANS customers



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ATS AIRCOM Systems

- d-ATIS System (AIRCOM evatis)
- DCL/PDC System (AIRCOM clever)
- ACARS Gateway
- ADS/CPDLC Gateway
 - Dual stack ATN/FANS gateway
- ISMS/DDTC
 - Integrated surface management system that includes implementation of the ACARS data link delivery of taxi clearance application.

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Conclusion

■ SITA

- has pioneered the introduction of the VHF and SATCOM ACARS service which is today an integral part of airline operations
- encourages and supports ATS providers to use the ACARS service for the introduction of initial ATS applications
- has actively contributed to the development and validation of AEEC and ICAO CNS/ATM standards
- is in the process of upgrading its entire VHF ACARS infrastructure to provide VDL Mode 2 services
- is prepared for the introduction of ATS services over ATN/VDL Mode 2
- committed to working with airlines and ATS providers to ensure that CNS/ATM becomes a reality

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Thank you for your attention



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